



Craftsbury

(Model 8391)

Woodstove OWNER'S MANUAL

Installation And Operating Instructions



We recommend that our products be installed and serviced by professionals who are certified in the U.S. by NFI (National Fireplace Institute). www.nficertified.org



**SAVE THIS OWNER'S MANUAL
FOR FUTURE REFERENCE**

**PLEASE READ THIS ENTIRE OWNER'S MANUAL BEFORE YOU INSTALL AND USE YOUR
NEW CRAFTSBURY WOOD STOVE.**

If this room heater is not properly installed, a house fire may result.

To reduce the risk of fire, follow the installation instructions.

Failure to follow these instructions can result in property damage, bodily injury, or even death.

Conforms to UL Std. 1482

Certified to ULC Std. S627

**CONTACT LOCAL AUTHORITIES WITH JURISDICTION (BUILDING DEPARTMENT or FIRE
OFFICIALS), ABOUT PERMITS REQUIRED, RESTRICTIONS AND INSTALLATION
INSPECTION IN YOUR AREA.**

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Introduction

Thank you for purchasing a Craftsbury woodstove from Hearthstone Quality Home Heating Products. This stove will provide years of comfortable heat. This stove also provides the benefits of advanced technology in wood burning without the cost and maintenance requirements of a catalytic device. The Craftsbury blends modern technology with the unique beauty and qualities of cast iron. We trust that you will appreciate the quality of this handcrafted product.

Your Craftsbury woodstove burns very efficiently, and produces a large amount of heat. However, you should not consider your Craftsbury the primary heat source for your home. The Craftsbury's large glass window allows you to enjoy the fire from a variety of locations in the room.

Please read this manual in its entirety. Its purpose is to familiarize you with your stove's safe installation, proper break-in, operation and maintenance. It contains extremely important information so keep it handy and refer to it often.

A qualified heating technician may need this owner's manual as a reference when installing this stove in your home. There are national, state, and local building codes that direct the technician on how to install your stove. These codes stipulate the dimension of stovepipe and clearances to walls, ceilings, hearth, and other combustible surfaces. The codes exist to reduce the risk of fire. Failure to follow these instructions can result in fire, property damage, bodily injury, and even death.

Install the stove in a safe, open area, away from traffic flow, doors, and hallways. If possible, try to install the stove near an existing chimney and chimney connector. It is extremely important to install this stove with the proper clearance from combustible surfaces. You can purchase specific connector pipe and special wall coverings as specified by this manual and the NFPA 211 code to protect combustible surfaces. As a general rule, keep furniture, drapes, curtains, wood, paper, and other combustibles at least 36 inches (92 cm) away from the stove. Never install the stove in or near a storage location for gasoline, kerosene, charcoal lighter fluid or any other flammable liquids.

Install the stove in your central living area to allow heat to radiate naturally to distant rooms. Do not install your stove in a poorly insulated area. This is inefficient and would likely result in higher fuel usage.

- **SAFETY NOTICE:**

AN IMPROPERLY INSTALLED STOVE CAN RESULT IN A HOUSE FIRE. FOR YOUR SAFETY, CAREFULLY FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.

Save these instructions.

The safety of your stove will depend on many factors, some of which include: distance to combustible objects, correct venting, and adequate chimney maintenance. Should you have any questions, do not hesitate to contact your dealer for additional information.

Contact your dealer for any necessary warranty service.

This Craftsbury Model 8391 stove is warranted by:

Hearthstone Quality Home Heating Products, Inc®
317 Stafford Ave.
Morrisville, Vermont 05661, USA
www.Hearthstonestoves.com

CODES

When you install your Craftsbury woodstove, it is imperative that you adhere to all Federal and local codes. Obtain these codes from either of the following sources:

American National Standards Institute, Inc. (ANSI)
1430 Broadway
New York, NY 10018
www.ansi.org

National Fire Protection Association, Inc. (NFPA)
Battery March Park
Quincy, MA 02269
www.nfpa.org

If you are installing your Craftsbury in a mobile or manufactured home, follow the guidelines described in the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280 (United States).

SAFETY INFORMATION

Read and understand this Owner's Manual thoroughly before installing and using this stove.

Make sure to install your stove:

- According to the manufacturer's recommendations
- In accordance with all applicable codes
- With the proper sized chimney

When using your stove, follow these safety precautions:

- **Never** modify this stove in any way.
- **Never** burn kiln dried, painted or treated wood in this stove.
- **Never** burn garbage or trash, colored or glossy paper, solvents, plywood, artificial logs, cardboard, or driftwood, in this stove.
- **Never** burn coal in this stove.
- **Never** use gasoline, kerosene, charcoal lighter fluid, or other flammable fluids to start or invigorate the fire. These fuels will cause dangerous burning conditions in the stove. Keep all such materials away from the stove.
- **Never** use the stove if the ash pan is damaged, or not present.
- **Never** use a wood grate or other device to elevate the fire.

- **Never** allow logs in the firebox to hit the glass when the door is closed.
- **Never** slam the door or use the door to force wood in to the stove.
- **Never** over-fire your stove. (See page 21)
- **Never** put articles of clothing or candles on a hot stove.
- **Never** connect the stove to a flue used by another appliance.

Other safety guidelines:

- Keep all combustible items such as furniture, drapes, clothing, and other items, at least 36" (0.92 m) from the stove (See page 8)
- Install a smoke detector, preferably in an area away from your wood stove.
- Keep a fire extinguisher handy. We recommend the type rated "A B C."
- Dispose of ashes properly. (See page 21)
- Keep children and pets away from the stove when it is burning; they could be seriously injured by touching a hot stove.
- Clean your chimney system as needed. (See page 23)
- Outside combustion air may be required if:
 1. This solid-fuel-fired appliance does not draw steadily, smoke rollout occurs, fuel burns poorly, or back-drafts occur whether or not there is combustion present.
 2. Existing fuel-fired equipment in the house, such as fireplaces or other heating appliances, smell, do not operate properly, suffer smoke rollout when opened, or back-draft whether or not there is combustion present.
 3. Opening a window slightly on a calm (windless) day alleviates any of the above symptoms.
 4. The house is equipped with a well-sealed vapor barrier and tight fitting windows and/or has any powered devices that exhaust house air.
 5. There is excessive condensation on windows in the winter.
 6. A ventilation system is installed in the house.

If these or other indications suggest that infiltration air is inadequate, additional combustion air should be provided from the outdoors. Outside combustion air can be provided to the appliance by using the optional outside air kit #90-53210

PERIODIC CHECKLIST

Perform each of these tasks at the specified intervals.

At the End of Every Week:

- Empty ashes from the firebox and ash pan, sooner if the firebox or the ash pan is full.

At the Beginning of Every Other Month:

- Depending upon your use of the stove, visually inspect the chimney connector and chimney for creosote. (see page 23)
- Check door seals using the "dollar bill test." - When the stove is cool, shut the door on a dollar bill. If the bill pulls out without any resistance, then your stove's door is not sealing properly. To tighten the seal, adjust the door latch mechanism or change the door gasket. (Refer to page 23.)

At the End of Every Season:

- Dismantle the chimney connector and clean it thoroughly. Replace any pieces that show signs of rust or deterioration.
- Inspect and, if necessary, clean your chimney.
- Clean out the inside of the stove thoroughly.
- Inspect all door gasket material and replace if worn, frayed, cracked or extremely hard.

EMERGENCY PROCEDURES

If you have a stovepipe or chimney fire, follow these instructions:

1. If the fire is too threatening, leave the area and call the fire department immediately! If not, perform the next three steps.
 2. Close the primary air control.
 3. Close the stovepipe damper (if present).
 4. Keep the stove front door closed!
- **WARNING: DO NOT ATTEMPT TO PUT OUT A STOVEPIPE OR CHIMNEY FIRE BY THROWING WATER ONTO THE STOVE, STOVEPIPE, OR CHIMNEY. THE EXTREMELY HIGH TEMPERATURE OF SUCH FIRES CAN CAUSE INSTANTANEOUS STEAM AND SERIOUS BODILY HARM.**

Once the chimney fire expires, leave the primary air control closed and let the fire in the stove die out completely. Inspect the stove, stovepipe, and chimney thoroughly for any sign of damage before firing the stove again. You must correct any damage before using your stove again.

Specifications

Maximum Heat Output:

40,000 BTUs per hour of cordwood (based on independent laboratory test results).

Floor Size of Heated Area:

Up to a maximum of 1,300 square feet. Factors unique to your home can reduce the square footage the stove will heat. Home insulation value, number and efficiency of windows, floor plan, stove placement, quality of the fuel and other conditions may limit the heating ability of the stove.

Firebox Capacity:

1.5 cubic feet.

Maximum Log Length: Up To 17.5" (44.5cm), through side door.

Emissions: 3.8 gph

Burn Time: Up to 6+ hrs. (*Heat Life™*: Up to 7 hours) Note: The amount and weight of wood contained per cubic foot of firebox volume can vary from 15 to 35 lbs. per cubic foot depending on type of wood, moisture content, packing density and other factors.

Stove Dimensions:

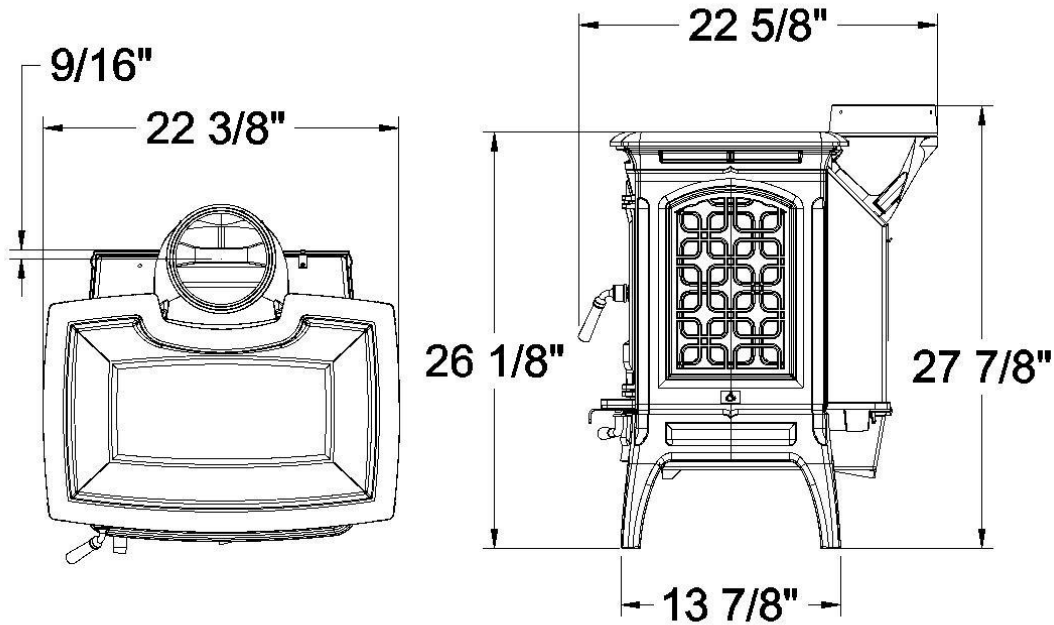
Height: 26 1/8" (66.4cm)
Width: 22 3/8" (56.8cm)
Depth: 17 3/8" (44.1cm)
Weight: 464 lbs. (210 kg)

Connector Size: 6" (152 mm) diameter
Metal Chimney: 6" (152 mm) inside diameter
Masonry Chimney: 6" (152 mm) inside diameter (round flue), 8" x 8" (203 x 203 mm) (square flue)

Efficiency:
 81% (LHV)

Optional Equipment:

Outside Air Kit	90-53210
Blower	90-57000
Spark Screen	93-69900
Rear Heat Shield	93-68900



Craftsbury Dimensions

Installation

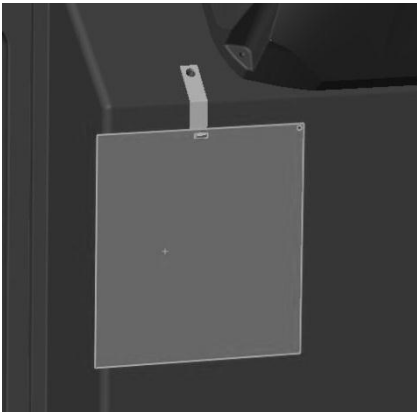
UNPACKING

Hearthstone packages your Craftsbury woodstove with the greatest care so that it ships safely. Under certain circumstances, however, damage may occur during transit and handling. When you receive the Craftsbury, carefully unpack and inspect the stove and all accompanying parts. Ensure that all parts are included in the ash pan. If any parts are damaged or missing, please contact your authorized Hearthstone dealer immediately.

PACK LIST

- 1- Craftsbury Model 8391 Woodstove
- 2- Owner's Manual

The label is attached by a cable to the back of the stove. Take care when lifting the stove not to damage the label or cable. After final positioning of the stove, the label may be stored on the hook attached to the back of the stove.



INSTALLING YOUR STOVE

Choose a place to install your Craftsbury woodstove. Inspect this location to make sure that the stove and

stovepipes will have the required clearance from combustible materials that are near the stove. Combustibles include walls, floor, ceiling, and chimney chase. You must carefully consider the clearances to all of these combustibles before actually connecting your stove.

If the floor is made of combustible material, then a non-combustible floor protector is required between the floor and the stove. An example of a non-combustible floor protector is a hearth constructed with a continuous layer of tile, brick, slate, glass or another non-combustible facing. There is no R-value requirement.

If you use a Rear connector pipe, ensure it is listed with Underwriter's Laboratories. Check the listing of your pipe with UL for the correct clearances.

The diagrams in this manual represent typical installations, but are specific to the Simpson Dura-Vent DVL brand.

Clearances to NFPA Code 211 Protected Surfaces

You can reduce the clearances to combustible surfaces by using any National Fire Protection Agency (NFPA) approved wall protection system. Please refer to NFPA Code 211 for specifications and complete details. You can obtain this information directly from the NFPA.

National Fire Protection Agency

Batterymarch Park
Quincy, MA 02269
1-800-344-3555
1-617-770-3000

www.nfpa.org

HEARTH REQUIREMENTS & FLOOR PROTECTION

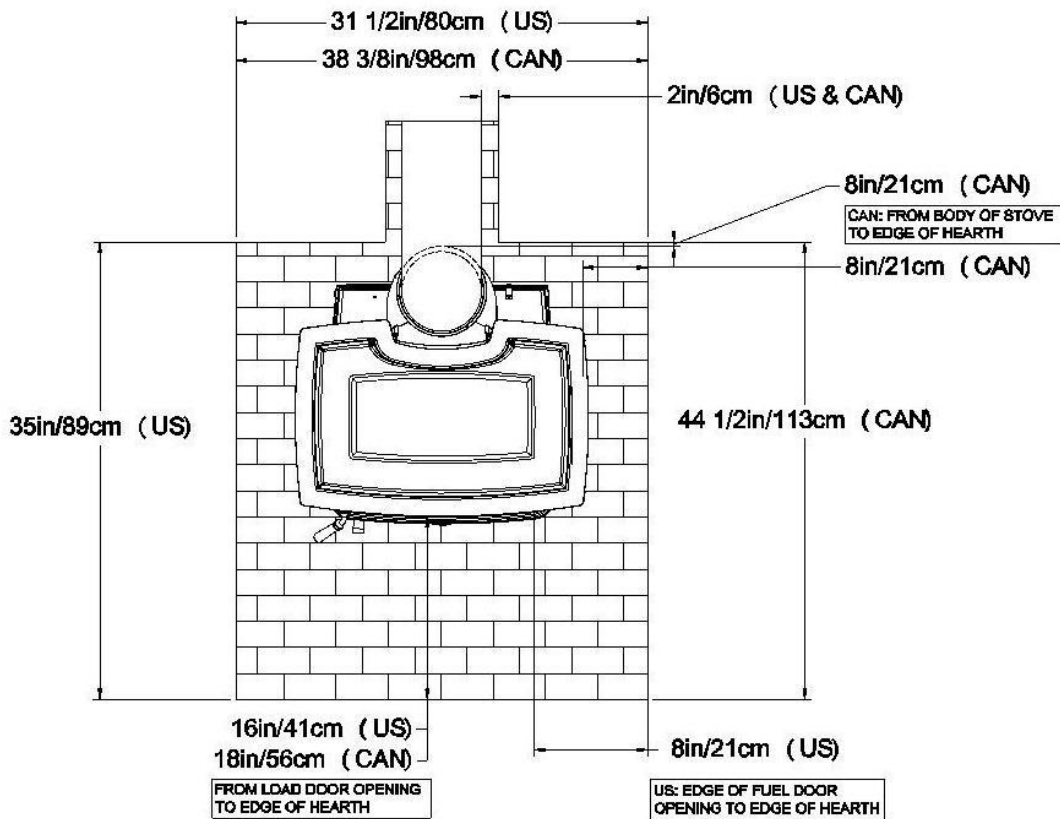
Ensure you protect combustible flooring with a covering of noncombustible material. The Craftsbury does not require an insulated hearth pad. The minimum floor protection must be met under the stove and extend beyond the stove as follows:

The minimum floor protection for US installations is 35in x 31 1/2 in.

The minimum floor protection for installations in Canada is 113cm x 98cm.

Installations in Canada require 18" (45.72 cm) of floor protection in front of fuel load door.

Hearth pad must extend under flue pipe and 2" (5cm) on either side of pipe.

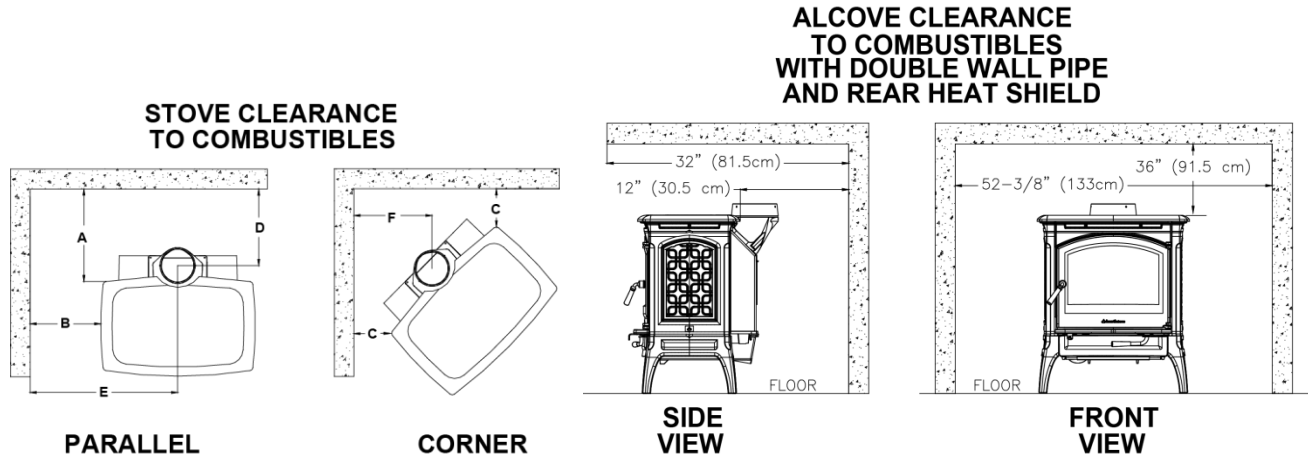


Hearth Dimensions

COMBUSTIBLE SURFACE REQUIRED CLEARANCES

Note: Dimensions shown in the following figures are from the top edge of the stove unless otherwise indicated.

It is very important to follow minimum clearances for chimney connectors to combustibles such as walls and ceilings when installing the stove near combustible surfaces.

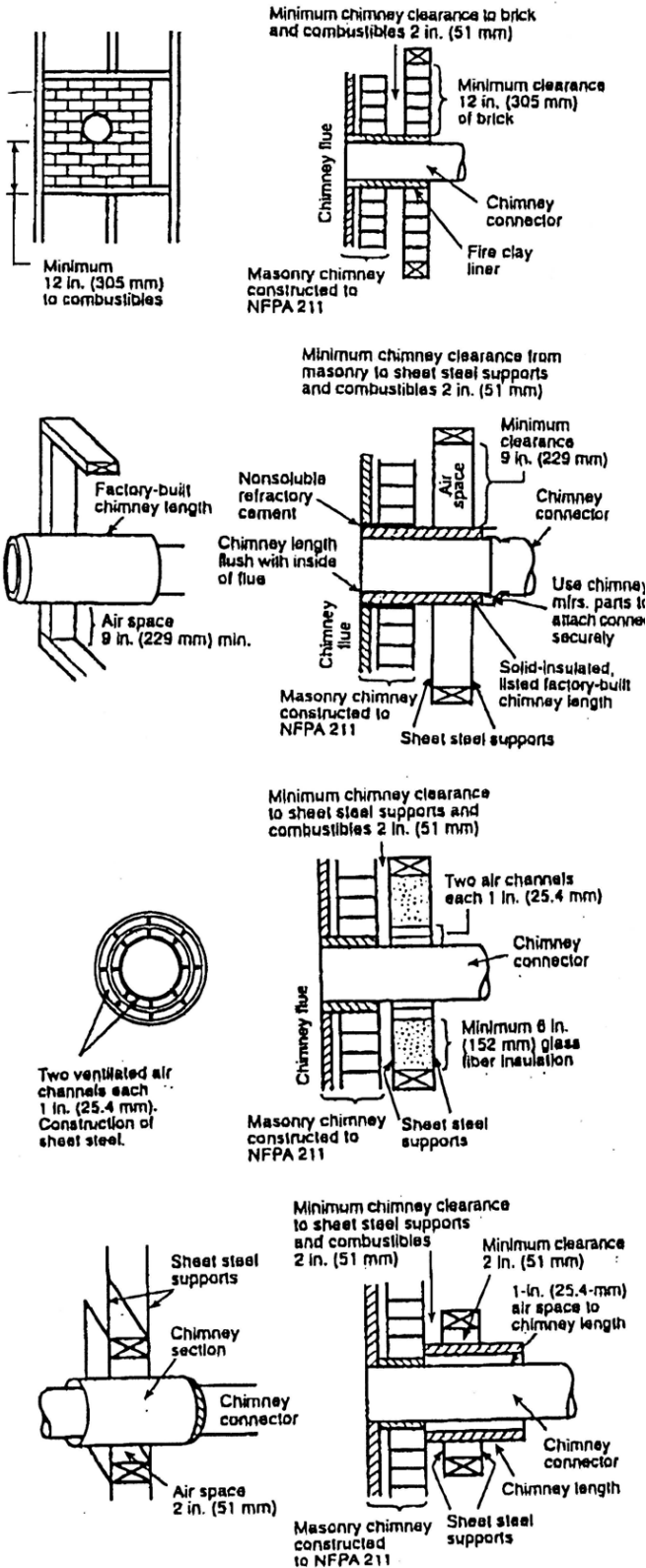


Clearances	Single wall connector				Double walls connector With rear heat shield kit			
	From unit (Top corner)		From pipe (center)		From unit (Top corner)		From pipe (center)	
	(cm)	(in)	(cm)	(in)	(cm)	(in)	(cm)	(in)
Rear wall	A: 61	24	D: 53	21	A: 30½	12	D: 23	9
Side wall	B: 35½	14	E: 64	25¼	B: 35½	14	E: 62	24½
Corner	C: 43	17	F: 57	22½	C: 25½	10	F: 38	15

ALCOVE	Double walls connector With rear heat shield kit			
Clearances	From unit (Top corner)		From pipe (center)	
	(cm)	(in)	(cm)	(in)
Rear wall	30½	12	15	9
Side wall	38	15	57	25½
Ceiling	91	36	N/A	N/A

FOR REAR HEAT SHIELD, USE KIT #90-68900

Chimney Connector Systems and Clearances from Combustible Walls for Residential Heating Appliances



- A. Minimum 3.5in thick brick masonry all framed into combustible wall with a minimum of 12in. brick separation from clay liner to combustibles. The fire clay liner shall run from outer surface of brick wall to, but not beyond, the inner surface of chimney flue liner and shall be firmly cemented in place.
- B. Solid-insulated, listed factory-built chimney length of the same inside diameter as the chimney connector and having 1in. or more of insulation with a minimum 9in. air space between the outer wall of the chimney length and combustibles.
- C. Sheet steel chimney connector, minimum 24 gauge in thickness, with a ventilated thimble, minimum 24 gauge in thickness, having two 1in. air channels, separated from combustibles by a minimum of 6in of glass fiber insulation. Opening shall be covered, and thimble supported with a sheet steel support, minimum 24 gauge in thickness.
- D. Solid insulated, listed factory-built chimney length with an inside diameter 2in. larger than the chimney connector and having 1in. or more of insulation, serving as a pass-through for a single wall sheet steel chimney connector of minimum 24 gauge thickness, with a minimum 2in. air space between the outer wall of chimney section and combustibles. Minimum length of chimney section shall be 12in. chimney section spaced 1in. away from connector using sheet steel support plates on both ends of chimney section. Opening shall be covered, and chimney section supported on both sides with sheet steel supports securely fastened to wall surfaces of minimum 24 gauge thickness. Fasteners used to secure chimney section shall not penetrate chimney flue liner.

SIDE CLEARANCE:

(FROM TOP EDGE OF STOVE)

8" - TO 2" OR LESS SIDE TRIM THICKNESS

9" - TO 2"-4" SIDE TRIM THICKNESS

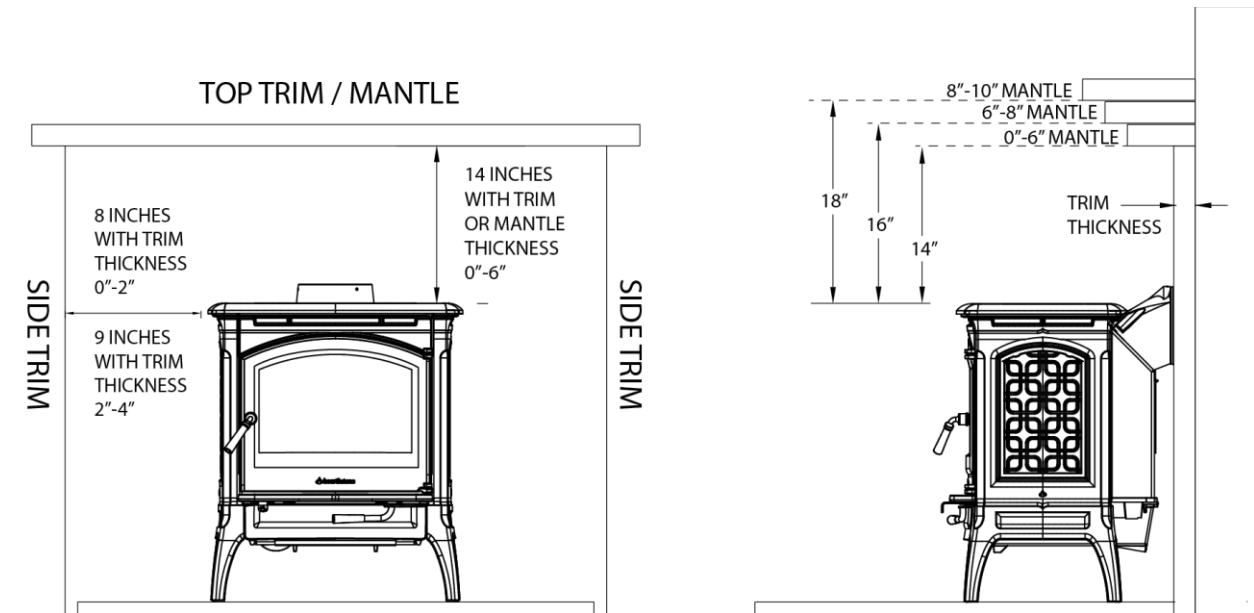
MANTLE OR TRIM TOP CLEARANCE:

(FROM TOP OF STOVE)

14"- TO 0"-6" MANTLE DEPTH

16"- TO 6"-8" MANTLE DEPTH

18"- TO 8"-10" MANTLE DEPTH



FRONT VIEW

SIDE VIEW

CLEARANCES APPLY WITH STOVE IN FIREPLACE ALSO

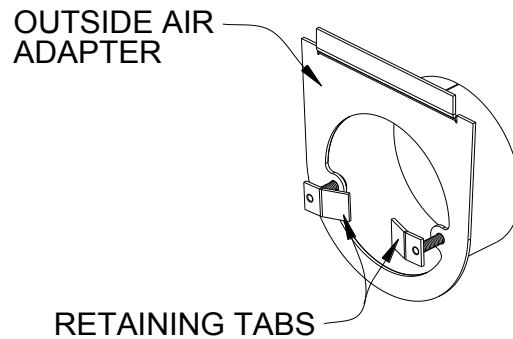
Trim and Mantle Clearances

OUTSIDE AIR SUPPLY

(Optional Kit #90-53210)

You can connect an outside air source directly to this stove using an optional outside air kit. The advantage of providing outside air directly to the stove is that the air used by the stove for combustion is taken from outside the residence rather than from within the room where the stove is located.

The outside air kit for this stove allows for the direct connection of the stove's air intake to a minimum 3" (76 mm) diameter duct (supplied by others) which leads to the outside of the house. When considering placement of the duct from the outside of the house to the hearth, keep in mind the need to avoid structural members of the house. The outside air kit attaches to the underside of the stove. Refer to the instructions provided with the kit for installation.



Outside Air Kit Detail

The International Residential Code (IRC) does not allow the outside air duct to terminate higher than the appliance. Some building officials also do not like to see any vertical rise in the duct's termination. Hearthstone recommends the termination be at the same level, or lower than the air intake on the stove.

Locate the termination of the duct on the outside wall of the home in such a manner to avoid the possibility of obstruction by snow, leaves or other material. Screen the termination using 1/4" x 1/4" mesh rodent screen and cover it with a rain/wind proof hood (flex pipe, outside termination, mesh, and hood supplied by others) Contact your dealer for availability).

VENTING COMPONENTS & CONFIGURATION REQUIREMENTS

- **DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE USED BY ANOTHER APPLIANCE**
- Single wall connector that is at least 24 MSG or 25 MSG blued steel stovepipe.
- Double wall connector (Rear pipe) which is used with a listed, factory-built "Type HT" chimney or with a masonry chimney to reduce clearances, is available from several manufacturers, your dealer can help you choose. Some air insulated connector pipe models available are Simpson Dura Vent DVL and Metalbestos DS. Security, GSW and Ameritec also have acceptable Rear connector pipe.
- When used in a mobile home, a spark arrester is required. (See page 16)
- The chimney connector cannot pass through a floor or ceiling, nor any attic or roof space, closet or similar concealed space. Where venting requires passage through a wall or partition of combustible construction, the installation must conform to NFPA Code 211 or CAN/CSA - B365.
- It is very important to follow minimum clearances for chimney connectors to combustibles such as walls and ceilings when installing the stove. Typical chimney connector clearances are outlined below. The single wall clearances are generic; the double wall clearances shown are specifically for Simpson DuraVent DVL and may vary with other brands. **Check the specifications from the manufacturer of your connector.**

COMPONENTS OF A VENTING SYSTEM

The complete venting system consists of several components: chimney connector, wall thimble, wall pass-through, chimney, and liner. It is *absolutely necessary* that you install all of these components

and maintain the clearances to combustibles discussed earlier to ensure a safe stove installation.

To protect against the possibility of a house fire, you *must properly install and constantly maintain the venting system*. Upon inspection, immediately replace rusted, cracked, or broken components.

- The *chimney connector* is the stovepipe from the woodstove to the chimney. The chimney connector stovepipe is 6" (152 mm) diameter, 24 MSG or 25 MSG blued steel connector pipe. *Do not use aluminum or galvanized steel pipe* - they cannot withstand the extreme temperatures of a wood fire.
- The *thimble* is a manufactured (or site-constructed) device installed in combustible walls through which the chimney connector passes to the chimney. It keeps the walls from igniting. You must use a wall thimble when installing a chimney connector through a combustible wall to the chimney.
- A *wall pass-through* (or chimney support package) also keeps the walls from igniting. You must use one when connecting through a wall or ceiling to a prefabricated chimney.
- Only install this stove to a *lined masonry chimney* or an *approved high temperature prefabricated residential* type building heating appliance chimney. *Do not* connect this stove to a chimney serving another appliance; you will compromise the safe operation of both the wood stove and the connected appliance.
- A *liner* is the UL 1777 or ULC S635 (for factory built fireplace or masonry) chimney.

You must connect your stove to a chimney comparable to those recommended in this manual. *Do not use stovepipe as a chimney*. Use stovepipe for freestanding installations only to connect the stove to a proper chimney.

- **WARNING: DO NOT CONNECT THIS APPLIANCE TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.**

INSTALLING A VENTING SYSTEM

Attach stovepipe sections to the flue collar and to each other with the crimped end toward the stove. If creosote builds up, this allows the creosote to run into the stove and not on the outside of the stovepipe or onto the stove.

Secure all joints, including attaching the stovepipe to the stove's flue collar, with three sheet metal screws. Install #10 x 1/2" (3 mm x 13 mm) sheet metal screws into the holes pre-drilled in the flue collar. Disregarding the screws can cause joints to separate from the vibrations that result from a creosote chimney fire.

You can simplify connecting stovepipe by using additional accessories such as telescoping pipes, slip-connectors or clean-out tees. These accessories ease the periodic inspection of your chimney, as well as allow you to dismantle the stovepipe easily (without moving the stove).

Install the stove as close as practical to the chimney, while maintaining all proper clearances. Install stovepipe that is as short and as straight as possible. Horizontal runs of stovepipe must always rise away from the stove at a minimum of 1/4" per foot (21mm/m).

We do not recommend long runs of stovepipe to increase heat dispersal. Longer lengths of stovepipe, or more connecting elbows, than necessary increase the chances of draft resistance and the accumulation of creosote buildup.

In general, you do not need to install a stovepipe damper with the Craftsbury. Some installations, however, could benefit from a stovepipe damper, such as a tall chimney which can create a higher than normal draft. In such cases, a damper can help regulate the draft. The Craftsbury requires a draft between 0.06" and 0.1" WC. For drafts above 0.1" WC, install a stovepipe damper. Check the draft at stove installation time.

Remember, the NFPA recommends minimum clearances for chimney connectors to combustibles such as walls and ceilings. Once the stove is installed at safe distances from these combustible surfaces, it is also important to maintain these connector clearances for the remainder of the installation.

CONNECTING THE STOVE TO A CHIMNEY

You can install your Craftsbury to a prefabricated metal chimney, or to a masonry chimney.

This room heater must be connected to (1) a listed Type HT (2100° F) chimney per UL 103 or ULC S629, or (2) a code-approved masonry chimney with a flue liner. The chimney size should not be less than the flue collar, or more than three times greater than the cross-sectional area of the flue collar.

We recommend installing a cleanout tee where possible to simplify chimney cleaning and maintenance.

Connecting to a Prefabricated Metal Chimney

There are two ways to install a prefabricated metal chimney:

- An *interior* installation where the chimney passes inside the residence through the ceiling and roof.
- An *exterior* installation where the chimney passes through the wall behind the stove then up the outside of the residence.

Whenever possible, choose an interior chimney. An interior chimney heats up quickly and retains its heat; thus promotes a better draft and discourages the formation of creosote. An exterior chimney does not benefit from the warmth of the building, so it typically operates at lower flue temperatures than an interior chimney and may experience increased creosote accumulation.

When connecting the Craftsbury to a prefabricated metal chimney, you must follow, precisely, the manufacturer's installation instructions. Use only Type HT (2100° F), prefabricated metal chimneys listed per UL 103 or ULC S629 standards.

Ensure the size of the prefabricated chimney's flue is appropriate for the Craftsbury. The Craftsbury requires a 6" (152 mm) inside diameter flue for new installations. A 6" diameter flue provides adequate draft and performance. You can use an 8" (203 mm) diameter existing flue with a reducer. An oversized flue contributes to creosote accumulation. (In this case, bigger is NOT better.)

When purchasing a prefabricated chimney to install with your stove, Ensure you also purchase from the same manufacturer the wall pass-through (or ceiling support package), "T" section package, fire-stops (when needed), insulation shield, roof flashing, chimney cap, and any other required accessories. Follow the manufacturer's instructions when installing the chimney and accessories. In addition, ensure you maintain all manufacturers' recommendations for the proper clearances to the chimney.

Connection to a Masonry Chimney

Consider two primary elements when connecting your stove to a masonry chimney: the chimney itself and the thimble where the stovepipe connects to the

chimney. **Use only code approved masonry chimneys containing a proper flue liner.**

Before connecting to a masonry chimney, hire a professional to examine the chimney for cracks, loose mortar, and other signs of deterioration and blockage. If the chimney needs repair, complete them before installing and using your stove. Do not install your stove until the chimney is safe for use.

Ensure the chimney's cleanout is complete and working properly. To avoid a loss of draft, the cleanout door must close completely and provide a tight seal. If the cleanout door leaks, the chimney will cool, your stove will perform poorly, and creosote can form.

Ensure the size of the chimney's flue is appropriate for this stove and that it is not too large. Use a masonry chimney with a maximum 6" Diameter or 8" x 8" (203 mm x 203 mm) tile size for best results. An oversized flue contributes to the accumulation of creosote.

Use the following checklist to ensure that your masonry chimney meets these minimum requirements:

Masonry Chimney wall construction:

- Mortared brick or modular block at least 4" (102 mm) thick – must use liner
- A mortared rubble or stone wall – must use liner

Flue liner options:

- Tile - minimum wall thickness of 5/8" (16 mm), installed with refractory mortar, and with at least 1" (25 mm) air space around the liner

- Stainless steel - UL listed 6" diameter, insulated or wrapped liner, or the space around the liner filled with vermiculite or suitable material (these keep the liner warmer for better performance)
- Ensure any equivalent flue liner is a listed chimney liner system meeting type HT requirements or other approved material.

Interior chimney requirements:

- Must have at least 2" (51 mm) clearance to combustible materials
- Must install fire stops at the spaces where the chimney passes through floors and/or ceiling
- Any insulation material must be at least 2" (51 mm) from the chimney

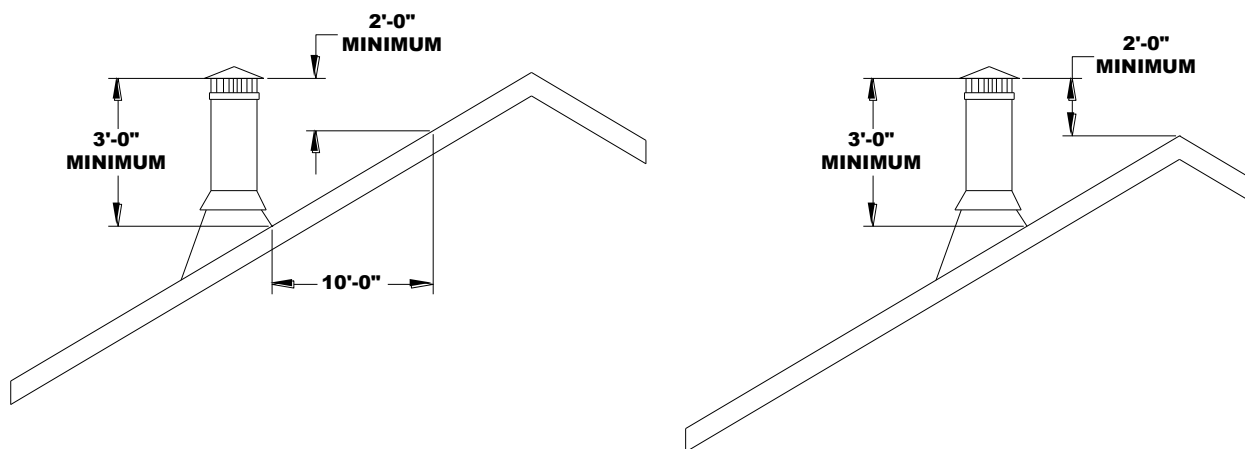
Exterior chimney requirements:

- At least 1" (25 mm) clearance to combustible materials

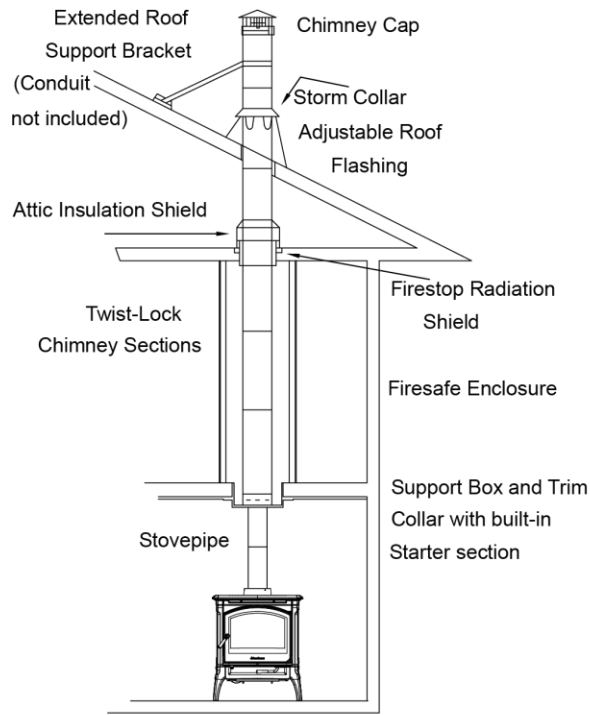
Chimney height requirements (See Figure 8):

- At least 3 feet (0.9 m) higher than the highest part of the roof opening through which it passes.
- At least 2 feet (0.6 m) higher than any part of the roof within 10 feet (3 m) measured horizontally from the top of the chimney.

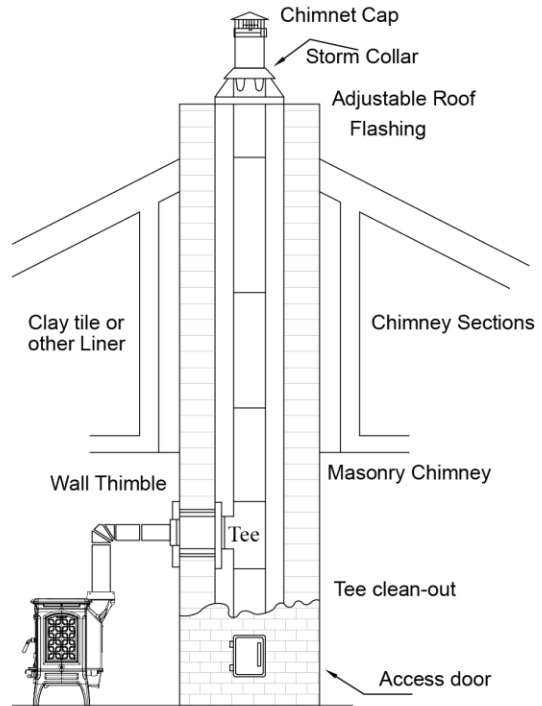
The recommended minimum chimney height is 10 feet (3 m) off the floor. The recommended maximum chimney height is 30 feet (9m). The Craftsbury requires a draft between 0.06" and 0.1" water column. Ensure your chimney is long enough to provide the minimum draft, and use a damper if your installation has a required chimney height that provides too much draft.



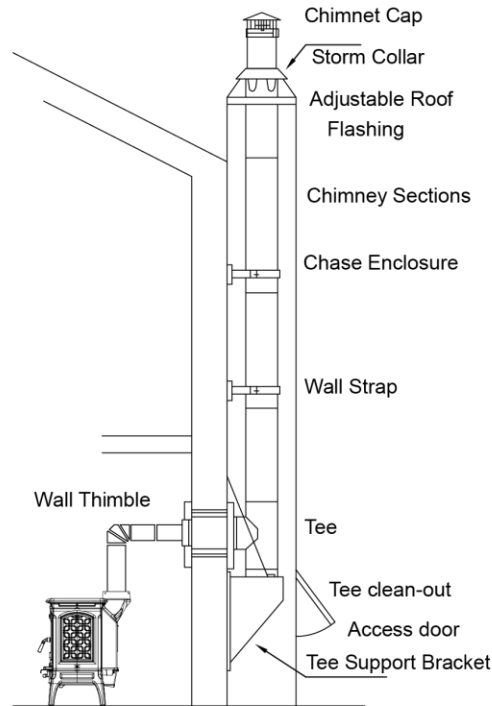
Chimney Height Requirements



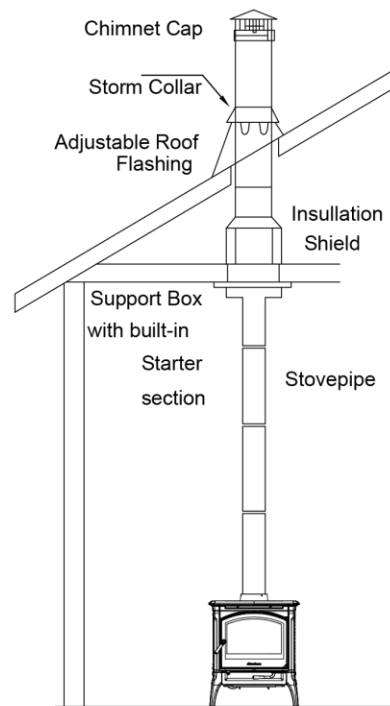
Two story house installation with attic.



Chimney pipe through Clay tile or other Lined Masonry Chimney



Chimney through outer wall with enclosed chase.
Chimney is supported by Tee Support Bracket.



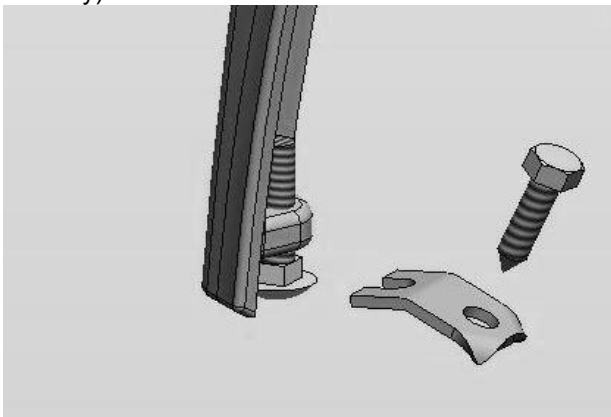
One story house installation with attic.
Chimney is supported by Ceiling.

Typical Chimney Configurations

INSTALLING IN A MOBILE HOME

Follow these special requirements for installing your stove in a mobile home.

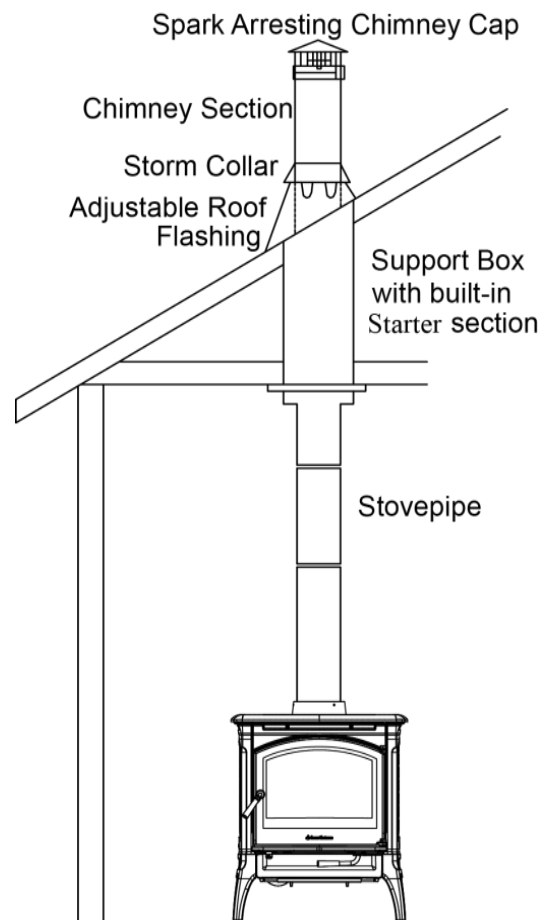
- Install the stove in accordance with 24 CFR, Part 3280 (HUD)
- Permanently attach the stove to your mobile home's floor. Use the shipping clips that came with the stove and fasteners long enough to attach securely to the subfloor. (The clips and fastener heads may be painted to minimize visibility).



Lock Down Detail

- Install a Mobile Home Chimney & Connector Kit*.
Each kit must include:
Stainless spark arrester cap, storm collar, Adjustable vented flashing – 0/12 – 6/12, Two 24" chimney pipes, 24" support box with built-in starter section and trim.
* (any UL or ULC approved equipment is acceptable)
- **WARNING: DO NOT INSTALL IN A SLEEPING ROOM IN A MOBILE HOME.**
- **CAUTION: MAINTAIN THE STRUCTURAL INTEGRITY OF THE MOBILE HOME WALLS, FLOOR, CEILING, AND ROOF WHEN INSTALLING AND USING YOUR STOVE.**
- Burning any fuel other than wood in this unit could generate dangerous levels of carbon monoxide within the living space.

- **THE FRONT DOOR MUST REMAIN CLOSED WHEN IN OPERATION EXCEPT FOR START UP AND LOADING.** Leaving the door open during use could cause any smoke or fire detectors in the home to be set off or a fire could escape the firebox and start the room on fire.
- **If this unit is installed in a mobile home, care must be taken to ensure adequate air is available. If not enough air is available it could starve the room of all the oxygen. (See page 26 for more details)**



Typical Mobile Home Installation.
Chimney is supported by Ceiling.

- **CAUTION: REMOVE THE CHIMNEY WHEN TRANSPORTING THE MOBILE HOME!**

Operation

Once your Craftsbury is installed, you are ready to light a fire.

Every installation, season's firewood, and operator's technique varies. Learn how to use your stove most efficiently for your installation. We can give you the basic principles, but only you can ensure maximizing the potential of your stove while also operating it safely.

- **WARNING: HOT WHILE IN OPERATION! KEEP CHILDREN, PETS, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.**

Read this entire chapter before lighting your first fire. It explains the controls and features of your wood stove, how to choose firewood, and how to use your stove on a daily basis.

CONTROLS AND FEATURES

Before lighting any fires, become familiar with the location and operation of your stove's controls and features and learn how to use them. For your own safety, do not modify these features in any way. We recommend you use fireplace gloves when the stove is in operation and hot.

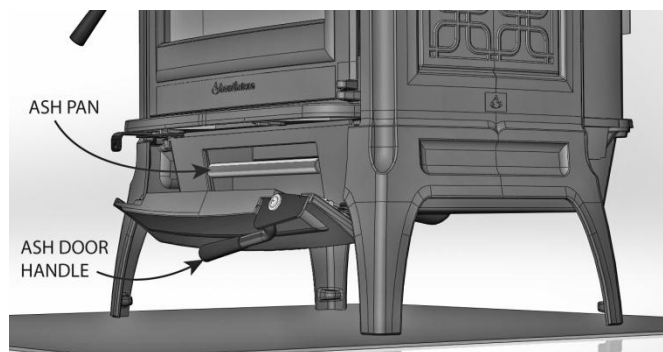


Front Door Handle

FRONT DOOR HANDLE: The firebox door allows you to load wood into your stove; a wood handle operates the door. To open the door, pull up on the handle and swing the door away from the stove. To latch the door, push the door tightly towards the firebox then continue to push the handle in and down until it latches shut. Gently pull on the door handle to make sure it is properly latched.

ASH PAN: (This becomes hot during operation. It is best to remove the ash pan only after the stove cools). To access the ash pan you must open the ash door. To open, pull the wooden handle toward

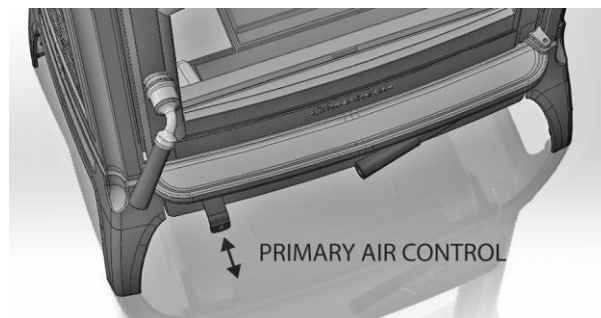
you and allow the door to swing to a horizontal position. To remove the ash pan, grip the handle, and then pull it out. The ash pan collects the ash residue from each fire and when full, allows you to remove the ash conveniently from the stove. Clear the firebox of ashes periodically. Sift the ashes through the grate in the bottom of the firebox into the ash pan or shake the ashes into the pan by repeatedly moving the ash grate forward and back. When finished, return the ash pan to its place and close the ash door. The ash door will latch automatically when pushed firmly into place.



Ash Pan & Ash Door

Do not operate the stove unless the ASH PAN is in place, and properly sealed by the gasket on the ash box door. A poor seal could cause overheating and damage the stove.

PRIMARY AIR CONTROL: This feature is located on the lower left front of the stove, under the ash lip. The primary air control allows you to regulate the amount of air entering the firebox. Generally speaking, the more air allowed into the firebox, the faster and hotter the rate of burn; conversely, less air creates a slower burn. Pull the lever out, away from the ash lip to open the primary air control; push the lever in under the ash lip of the stove to close the primary air control.



Primary Air Control

CHOOSING FIREWOOD

Burn only natural firewood (known as cordwood) in the Craftsbury 8391 Wood Heater. This stove is not designed to burn other fuels.

- **CAUTION: DO NOT USE CHEMICALS OR FLAMMABLE FLUIDS TO START THE FIRE. DO NOT USE CHARCOAL, PELLETS, COAL, ARTIFICIAL LOGS OR ANY OTHER MATERIALS AS FUEL; THEY ARE NOT SAFE. DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS.**
- **THE USE OF UNAUTHORIZED FUEL SUCH AS COAL COULD PRODUCE HIGH LEVELS OF CARBON DIOXIDE IN THE LIVING SPACE. AT HIGH LEVELS CARBON DIOXIDE COULD RESULT IN PERSONAL INJURY OR DEATH.**

The quality of your firewood directly affects heat output, duration of burn and performance of your stove. Softwoods generally burn hotter and faster, while hardwoods burn longer and produce better coals. Density and moisture content are two critical factors to consider when purchasing wood for your stove.

The following is a list of some wood species and their relative BTU (British Thermal Unit) content. The higher the BTU content, the longer the burn. Firewood with higher BTUs is generally ideal for a wood stove.

Wood Heat Value: Sorted By Btu Content		
Common Name	Lb/ cord	MBTU/ cord
High		
Osage Orange (Hedge)	4,728	32.9
Hickory, Shagbark	4,327	27.7
Hop Hornbeam (Ironwood)	4,267	27.3
Beech, Blue (Ironwood)	3,890	26.8
Birch, Black	3,890	26.8
Locust, Black	3,890	26.8
Hickory, Bitternut	3,832	26.7
Locust, Honey	3,832	26.7
Apple	4,100	26.5
Mulberry	3,712	25.8
Oak, White	4,012	25.7
Medium High		
Beech, European	3,757	24
Maple, Sugar	3,757	24
Oak, Red	3,757	24
Ash, White	3,689	23.6
Birch, Yellow	3,689	23.6

Medium		
Juniper, Rocky Mtn	3,150	21.8
Elm, Red	3,112	21.6
Coffeetree, Kentucky	3,112	21.6
Hackberry	3,247	20.8
Tamarack	3,247	20.8
Birch, Gray	3,179	20.3
Birch, White (Paper)	3,179	20.3
Walnut, Black	3,192	20.2
Cherry	3,120	20
Ash, Green	2,880	19.9
Cherry, Black	2,880	19.9
Elm, American	3,052	19.5
Elm, White	3,052	19.5
Sycamore	2,808	19.5
Ash, Black	2,992	19.1
Maple, Red	2,924	18.7
Fir, Douglas	2,900	18.1
Medium Low		
Boxelder	2,797	17.9
Alder, Red	2,710	17.2
Pine, Jack	2,669	17.1
Pine, Norway (Red Pine)	2,669	17.1
Pine, Pitch	2,669	17.1
Catalpa	2,360	16.4
Hemlock	2,482	15.9
Spruce, Black	2,482	15.9
Pine, Ponderosa	2,380	15.2
Low		
Aspen, American	2,290	14.7
Butternut (Walnut, White)	2,100	14.5
Spruce	2,100	14.5
Willow	2,100	14.5
Fir, Balsam	2,236	14.3
Pine, White (Eastern, Western)	2,236	14.3
Fir, Concolor (White)	2,104	14.1
Basswood (Linden)	2,108	13.8
Buckeye, Ohio	1,984	13.8
Cottonwood	2,108	13.5
Cedar, White	1,913	12.2

Moisture content also plays a key role in the performance of your stove. Wood freshly cut from a living tree (green wood) contains a great deal of moisture. As you might expect, green wood burns poorly. You must season green wood before using it in your wood stove. To season green wood properly, split, stack, and allow it to air dry for a period of one year. Green wood may provide less than 2000 Btu per pound, whereas dry wood can provide up to 7000 Btu per pound.

Stack the firewood on skids or blocks to keep it off the ground, cover only the top of the stack. Plastic or tarps that cover the sides of the woodpile trap moisture and prevent the wood from drying. As for stacking, an old Vermonter said, "The spaces between the logs should be large enough for a mouse to get through, but not for the cat that's chasing it."

- **CAUTION: DO NOT STORE FIREWOOD WITHIN THE STOVE'S SPECIFIED CLEARANCES TO COMBUSTIBLE MATERIALS.**

BUILDING A FIRE

Once you understand the controls of your wood stove and have the appropriate firewood, you are ready to start a fire.

- **WARNING: NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR 'FRESHEN UP' A FIRE IN THIS HEATER. KEEP ALL SUCH LIQUIDS WELL AWAY FROM THE HEATER WHILE IT IS IN USE.**

BREAKING IN YOUR WOOD STOVE

It is imperative that your stove be "broken in" slowly. Cast iron must be "seasoned"; over-firing a new stove may cause castings to crack or may damage other stove parts.

The soapstone on the back and bottom in your firebox is intended to prevent thermal stress; leave it in place in the firebox at all times.

When you light your first fires, the wood stove will emit some smoke and fumes. This is normal "off-gassing" of the paints and oils used when manufacturing the wood stove. If you find it necessary, open a few windows to vent your room. The smoke and fumes will usually subside after 10 to 20 minutes of operation. The odor and smoke will end once the stove is "cured".

During the break-in fires you will not be heating the stove to the maximum temperatures you will

be once the stove is seasoned. Due to this you may notice a small amount of black liquid dripping from the bottom of the stove. This is due to incomplete combustion of the wood and the condensation within the stove. This liquid will only last for the first couple of fires. After this the dripping will stop. You may want to place a noncombustible material under the stove to protect your hearth until your break-in fires are complete.

Avoid the following conditions that can cause the glass, soapstone, steel or cast iron pieces to break:

- Do not throw wood into the stove.
- Do not use the door as a lever to force wood into the stove.
- Do not load wood encrusted with ice into a burning stove - the thermal shock can cause damage.
- Do not use a manufactured log grate. Burn the fire directly on the cast iron bottom of the firebox.

BUILDING A BREAK IN FIRE

- 1) Open the front door and place five or six double sheets of tightly twisted newspaper in the center of the firebox. Arrange kindling in a crisscross pattern over the newspaper. Kindling should be approximately ten pieces, 1/2" (13 mm) in diameter and 10" to 18" (254 mm to 457 mm) long.
- 2) Fully open the primary air control by pulling the control handle fully out, away from the ash lip.
- 3) Light the paper under the kindling. Leave the door slightly ajar momentarily until the kindling has started to burn and draft begins to pull.
- 4) Close the door and allow the fire to burn. Keep the door closed while the stove is in use.
- 5) **KEEP A WATCHFUL EYE ON YOUR STOVE** to maintain a steady, low-heat fire. Your first fire should make the stove warm but **not hot to the touch**. Visible steam, or boiling moisture and hissing indicate the soapstone is too hot. At most, a few small chunks of wood should be added to the fire to reach safe break-in temperatures.
- 6) Once the stove is warm but **not hot to the touch**, close the primary air control by pushing it fully toward the ash lip, and allow the fire to die out completely.
- 7) Let the stove return to room temperature.

Your first fire and first fire each season thereafter should be built and maintained as outlined above. Your patience will be rewarded by a properly seasoned stove.

- **NOTE:** The cool flue gas temperatures present during the break-in procedure may cause rapid creosote build-up. The door glass may also get dirty. A good hot fire will clean it. We recommend a visual inspection (and cleaning if necessary) of your stovepipe and chimney once the break-in procedure is completed.

NORMAL OPERATION

Prior to loading the stove, ensure the ash grate and the ash pan are in place.

BUILDING A FIRE FOR EVERYDAY USE

- 1) Open the front door and place five or six double sheets of tightly twisted newspaper in the center of the firebox. Arrange kindling in a tee-pee configuration over the newspaper. Use approximately 10 pieces of kindling, 1/2" (13 mm) in diameter and 10" to 16" (254 mm to 406 mm) long.
- 2) Fully open the primary air control by pulling the lever straight out from under the ash lip.
- 3) Light the paper under the kindling. Leave the front door slightly ajar momentarily until the kindling begins to burn and draft begins to pull.
- 4) Close the door and allow the fire to burn.
- 5) Once the kindling is burning, open the front door and add logs, small at first, to build the fire up. Ensure you keep the logs away from the glass in front in order for the air-wash system to work properly. Keep the front door and ash pan closed while the stove is in use.
- 6) Once the fire is burning well, use the primary air control to regulate the desired rate of burn. Pulling the lever out, away from the stove front opens the PRIMARY AIR CONTROL for a high rate of burn or pushing it under the ash lip the stove will produce a low rate of burn.

Note: When opening the front door to reload or re-arrange logs, it is advisable to open the door just a crack, pause for a moment then open the door completely. This procedure allows the firebox to

clear of smoke before the door is open fully. In addition, reloading on a bed of hot, red coals reduces smoking time and brings fresh fuel up to a high temperature rapidly.

BURN RATE

HIGH BURN: Fully load the firebox with wood on a bed of hot coals or on an actively flaming fire and fully open the primary air control. A high burn rate is recommended once or twice a day to fully heat the stovepipe and chimney, which will help minimize creosote accumulation.

MEDIUM BURN: Set the primary air control to a mid-range setting by pulling the air control about half way out. This will be the appropriate setting for the heating needs of the area being heated. A medium burn rate should be the typical setting and is preferable if the stove is to be left unattended.

LOW BURN: Close the primary air control for a low burn rate. A low burn rate over extended periods of time is not advisable as it may promote the accumulation of creosote. The venting system should be inspected frequently if low burn rates are maintained consistently.

CLEAN BURN: After reloading with wood, burn the stove with the primary air control fully open for 20 to 30 minutes. This manner of operation ensures early engagement of the secondary combustion system which, when engaged, minimizes creosote buildup in the chimney.

OVER-FIRE CAUTION

Over-firing means the stove is operating at temperatures above normal temperatures reached during High Burns outlined in the *BURN RATE* section. Carefully avoid over-firing, as it will damage the stove. Symptoms of chronic over-firing can include warped components, short burn times, a roaring sound in the stove or stovepipe, and discoloration of the stovepipe. A properly installed stove using fuel and following operating procedures as outlined in this manual should not over-fire.

Excessive draft, inappropriate fuel, and operator error can cause over-firing. Correct an over-fire situation as follows:

- **EXCESSIVE DRAFT:** Contact your local dealer to have a draft reading taken. Any draft in excess of 0.1 WC requires a damper in the stovepipe. Some installations may require more than one damper.
- **INAPPROPRIATE FUEL:** Do not burn coal; kiln dried lumber, wax logs, compressed wood or anything other than natural cordwood.
- **OPERATOR ERROR:** Ensure all the gaskets are in good condition. Replace worn out or compressed gaskets. Do not burn the stove with the front door or ash door in the open, or partially open position.

If you suspect that your stove is over-firing, discontinue use and contact your dealer immediately. **Damage caused by over-firing is not covered by your warranty.** Results of over-firing can include warped or burned out internal parts, cracked refractory panels, discolored or warped external parts, and damaged finish.

- **ANY SIGNS OF OVER-FIRING WILL VOID YOUR WARRANTY!**
- **THE FRONT DOOR AND ASH PAN DOOR MUST REMAIN CLOSED WHEN IN OPERATION EXCEPT FOR START UP AND LOADING.**

REMOVAL AND DISPOSAL OF ASHES

Remove ashes only when the stove is cold. Use the provided protective fireplace glove if the ash pan is warm. Exercise extreme caution when handling, storing or disposing of ashes.

The ash pan is located behind the ash door at the bottom front of the stove. The ash pan collects burned ash from a fire and allows you to remove the ash conveniently from your wood stove. Clear the firebox of ashes, and do not let them build up too high. You can leave a thin layer of ashes in the

firebox if preferred. It is important to prevent ashes from building up around the front door opening or they will spill out, or they can pack into the gasket channel and prevent proper sealing. To remove ashes, sift the ashes across the grate into the ash pan. The large ash pan is easy to remove for convenient disposal of ashes. Dump ashes from the ash pan directly into a **metal** container with a tight fitting lid. Do not place any other items or trash into the metal container. Do not pour water into the container. Replace the container's lid and allow the ashes to cool. Never place the ash disposal container on a combustible surface or vinyl flooring, as the container could be **hot!**

Pending disposal, place the closed ash container on a noncombustible floor or on the ground outside, well away from all combustible materials, liquid fuels, or vehicles. Retain ashes in the closed container until all coals thoroughly cool.

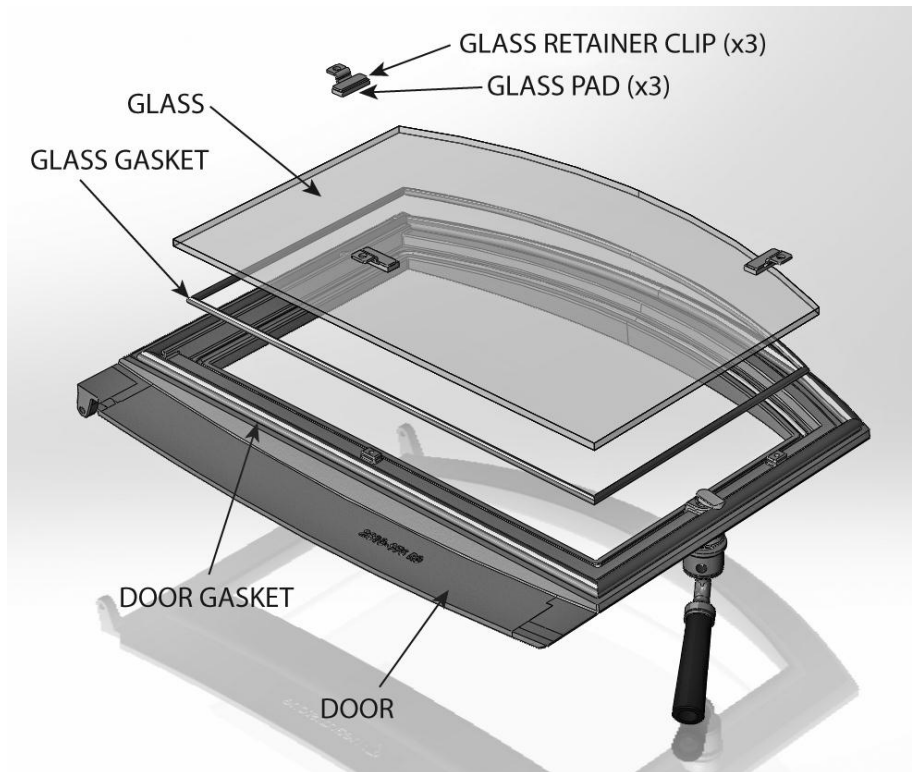
If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

- **NEVER** place ashes in wooden or plastic containers, in trashcans with other trash, or in paper or plastic bags, no matter how long the fire has been out. Coals within a bed of ashes can remain hot for several days once removed from the firebox.

Maintenance

GLASS REPLACEMENT PROCEDURES

- **WARNING: DO NOT OPERATE THIS APPLIANCE WITH THE GLASS PANEL REMOVED, CRACKED, OR BROKEN. DO NOT SUBJECT THE DOOR TO ABUSE, SUCH AS STRIKING OR SLAMMING SHUT. ONLY A QUALIFIED SERVICE PERSON SHOULD REPLACE THE GLASS PANEL.**



Front Door assembly

1. Follow the instructions included with the replacement glass kit.
2. Remove the door.
3. Remove the screws from the glass retainer clips (use penetrating oil if necessary) – lift the retainer clips off the glass. Set aside for reinstallation.
4. Carefully lift the damaged glass out of the door and discard.
5. Remove any remaining glass and old gasket material.
6. Clean the screw holes and place a small amount of anti-seize compound in each one.
7. Replace the old gasket with the new gasket (see page 23)
8. Place the new glass onto the door. **Ensure sticker is on the exterior face of the glass.**
9. **Important! Center the glass** and ensure that the edges of the glass are parallel with the edges of the opening.
10. Check glass position again (centered, and parallel), then screw the glass retainer clips back on the door using a crisscross pattern. Tighten the screws no more than 1/8th of a turn after they seat. The glass will break at this point if not positioned correctly.
11. Apply a light film of anti-seize lubricant on the door's hinge pins if needed.
12. Install the door.
13. After 5 or 6 fires, check the glass retainer screws, and retighten if necessary.

Required Glass Kit: Part Number: 93-58905 (Glass and gasket). Use only 5mm Ceramic IR, or Neoceram IR glass. Contact your Hearthstone dealer.

Creosote Formation & Removal

When wood burns slowly at low temperatures, it may produce tar and other organic vapors, which combine with expelled moisture to form creosote. These creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire, which may damage the chimney or even destroy the house. When burning wood, inspect the chimney connector and chimney at least once every two months during the heating season to determine if there is a creosote buildup.

If a creosote build-up occurs, inspect the stovepipe connector and chimney more often, at least monthly during the heating season to monitor the accumulation. If a creosote residue greater than 1/4" (6 mm) accumulates, remove it to reduce the risk of a chimney fire.

Prevention

Burn the stove with the primary air control fully open for 35 - 45 minutes daily to burn out creosote deposits from within the stove and the venting system.

After reloading with wood, burn the stove with the primary air control fully open for 15 to 20 minutes. This manner of operation ensures early engagement of the secondary combustion system that minimizes creosote buildup in the chimney.

If your glass always remains dirty, your operating temperatures are too low or your wood is wet; therefore, there is a higher risk of creosote buildup.

Inspect the venting system at the stove connection *and* at the chimney top. Cooler surfaces tend to build creosote deposits faster, so it is important to check the chimney at the top (where it is coolest) as well as from the bottom near the stove.

Cleaning

Remove accumulated creosote with a cleaning brush specifically designed for the type of chimney in use. We recommend you use a certified chimney sweep to perform this service. Contact your dealer for the name of a certified chimney sweep in your area (your dealer may be a certified sweep!).

We recommend that before each heating season you have the entire system professionally inspected, cleaned and repaired, if necessary.

GASKETS

Replace door gasket material every two to three seasons, or whenever it becomes deteriorated or loose, depending on stove use. If the door seal leaks, a new gasket will ensure a tight seal and improve stove performance.

We recommend you only use Hearthstone replacement gaskets when you need to replace your door gasket. Contact your dealer for a gasket kit that includes instructions, and the gasket for your stove.

To replace door gaskets, first pull out the old gasket with needle nose pliers. Clean any debris from the gasket channel with a wire brush. Apply a thin, continuous bead of the gasket cement to the prepared channel and push the new gasket into place without stretching or bunching the gasket material. Cut off any excess rope gasket with sharp scissors. The door should be shut immediately to fully press the gasket into place and assure a positive seal.

The Craftsbury requires the use of the following gaskets sizes:

GLASS: 46-1/4 inches of 3/16" (4.8mm) diameter rope gasket
FRONT DOOR: 53-1/2 inches of 1/2" (12.7mm) diameter rope gasket
ASH PAN DOOR: 27 inches 1/2" (12.7mm) diameter rope gasket

GLASS

The glass used in our stoves is actually not plain glass, but a tough, clear ceramic material capable of operating at temperatures up to 2300° F. Do not operate the stove with a broken door glass. Do not abuse the front door by striking or slamming.

When necessary, clean the glass. We recommend using a damp paper towel dipped in gray ash. Rub the inside of the glass with a circular motion. When all the deposits are removed, clean up with window cleaner or with commercial stove glass cleaners, which are available from your local dealer. Never attempt to clean the glass while the fire is burning or while the glass is hot. Remove deposits by following the instructions provided with the cleaner. Wipe the cleaner off with a soft cloth, or black & white newsprint.

Important: scratching or etching the glass will weaken the integrity of the glass. Do not use a razor blade, steel wool, or any other

abrasive material to clean the glass. Use a cleaner specifically manufactured for woodstoves only.

The front door glass is a ceramic, thermal shock-resistant glass, made specifically for use in woodstoves. Do not use any replacement glass other than the ceramic glass manufactured and supplied for use in this woodstove. Replacement glass is available through your local dealer.

Replace the door glass immediately if broken or chipped. Contact your local dealer for replacement glass. The glass kit includes instructions and everything needed for the repair. If you replace the glass yourself, wear work gloves and safety glasses.

Required Glass Kit: PN: 93-58905 (Glass and gasket).

CAST IRON

Use black, high-temperature stove paint (satin black by Stovebright) to touch up and maintain the original appearance of painted cast iron. Use a damp sponge to wipe clean. Dry the cast iron thoroughly to prevent rusting.

Use black, high-temperature stove paint to touch up and maintain the original appearance of painted cast iron. Use a damp sponge to wipe clean. Dry the cast iron thoroughly to prevent rusting.

Enamel castings can be cleaned with a standard glass cleaner on a cool stove. With time and use, a very fine, subtle network of crazed lines may appear seemingly beneath the surface of the enamel. Crazing is a natural predictable process and does not represent a flaw.

Troubleshooting

COMMON ISSUES

Virtually all woodstove operators experience basic common problems at one time or another. Most are correctable and generally require only a minor adjustment of the stove, installation, or operating technique. In cases where weather conditions dramatically affect stove performance, the problems are typically temporary and solve themselves once the weather changes.

If you question whether your stove is producing adequate heat, the best way to troubleshoot the problem is to monitor the temperature of the stack no more than 12 inches (30 cm) above the flue collar. A 400° F (200° C) stovepipe confirms the stove is supplying sufficient heat. Keep in mind that your house itself will regulate room/house temperatures. How well the walls, floors and ceilings are insulated, the number and size of windows, the tightness of outside doors, and the construction or style of your house (vaulted ceilings or other open spaces which collect large percentages of heat, ceiling fans, etc.) all are determining factors of room temperature.

Your stove's performance is also dependent on its installation. One common cause of poor performance is an oversized chimney flue. Oversized chimney flues result in decreased draft, which prevents the smoke from rising out the chimney. Oversized flues are also more difficult to heat effectively, especially when burning a high efficiency stove. Cool flue temperatures inhibit the establishment of a strong draft (and encourage the accumulation of creosote). The lack of a strong draft will cause the fire to die down and may even force smoke to pour into the room.

If your chimney is the proper size and a strong draft is not easily established, there is the possibility that the chimney is too cold. Again, hot chimneys promote stronger drafts. Opening a window briefly in the room while lighting the stove may help.

Other draft guidelines are as follows:

An **"AIRTIGHT" HOUSE**: The air supply (infiltration) to the interior of the house may be inadequate if your home is super-insulated or especially well sealed. This phenomenon of air starvation within the

building is exacerbated if exhaust fans, such as clothes dryers, bathroom fans or cook stove exhaust fans, are in operation within the home. Outfitting your stove with the optional outside air adaptor connected to an air duct, which leads to the outside of the building, can correct this problem.

Tall Trees or Buildings: These obstructions, when located close to the top of the chimney can cause chronic or occasional downdrafts. When selecting a site for a new chimney, consider the placement of other objects near the proposed chimney location.

Wind Velocity: Generally, the stronger and steadier a wind, the stronger (better) the draft. However, "gusty" wind conditions can cause erratic downdrafts. For consistent problems, consider a high wind cap, such as the Vacu-Stack.

Barometric Pressure: Chimney drafts are typically sluggish on balmy, wet or muggy days (low barometric pressure). This is a weather-related phenomenon, which generally is self-correcting as the weather changes.

Briskness of Fire: The hotter the fire in your stove, the hotter your chimney and, therefore, the stronger the draft.

Breaks in the Venting System: An unsealed clean-out door at the bottom of the chimney, leaky stovepipe joints, a poor stovepipe-to-thimble connection, missing caps, or a leaky chimney all can cause inadequate draft.

Seasonal Factors: Early fall and late spring are generally difficult seasons in which to establish proper drafts. The colder the outside air is relative to room temperature, the stronger the draft.

OPERATING THE STOVE

As outlined above, there are days when a good draft is just not easy to establish. The causes are usually seasonal factors or a cold chimney. Try starting the fire by using small kindling and fuel to obtain a quick, hot fire. Tend the fire frequently with small fuel until the chimney is hot and the draft is well established. Sometimes, partially opening a first floor window briefly will help quickly get draft established.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTIONS
STOVE SMOKES	Operating Technique	Fully open the primary air control one minute before opening doors.
	Cold Chimney or reverse draft	Preheat the chimney when first starting a fire. Briefly open a window in the room containing the stove.
	Blocked Chimney	Examine the chimney and stovepipe for blockage or creosote accumulations.
	Oversized Chimney	Reline the chimney to the appropriate diameter
	Undersized Chimney	Install a draft inducer or replace the chimney.
	Chimney Too Short	Lengthen the chimney.
	Air Infiltration Into The Chimney	Seal chimney connections and openings. Check clean-out doors.
	More Than One Appliance Connected to the Flue	Disconnect all other appliances and seal openings.
BACK-PUFFING OR GAS EXPLOSIONS	Operating Technique	Fully open the primary air control one minute before opening the door and keep it fully open for a few minutes after reloading.
	Extra Low Burn Rate	Burn the stove at a higher burn rate.
	Chimney Down-draft	Install a chimney cap.
	Excessive Ash Build-up	Empty the ash pan more frequently. Increase efficiency of burns, and avoid using poor quality or green wood.
UNCONTROLLED OR SHORT BURN	Unsealed or Open Door	Close the door tightly or replace the gaskets.
	Excessive Draft	Check the installation. Operate at LOW BURN. Install stovepipe damper. Draft in excess of 0.1 wc should be corrected with a stovepipe damper(s)
	Extra Long Chimney	Shorten the chimney. Install stovepipe damper(s).
	Oversized Chimney	Reline the chimney to the proper diameter.
	High Winds or Hilltop Location:	Install a chimney cap.
INSUFFICIENT HEAT	Poor Quality, low Btu content, or Green Wood	Use only air-dried wood, preferably dried <u>at least</u> one year. Use a wood with a high Btu content if available.
	Low Burn Rate	Operate the stove at a higher burn rate.
	Cold Exterior Chimney	Reline or insulate the chimney.
	Leaky Stovepipe or Chimney	Check the installation. Replace with a pre-fabricated insulated chimney system or a properly sized masonry chimney.
	Too Much Heat Loss From House	Add insulation, use energy efficient windows, or caulk windows, and seal openings in home.
	Excessive Ash Build-up	Empty the ash pan more frequently. Increase efficiency of burns, and avoid using poor quality or green wood.
BLISTERING OF FINISH	Operating Technique	Do not over-fire the stove. Monitor stove temperatures. Use seasoned wood only.
	Excessive Draft	Check the DRAFT. A damper may be required. Operate the stove at a LOW BURN range.

REPLACEMENT PARTS & OPTIONAL ACCESSORIES

QPA	PART #	DESCRIPTION	QPA	PART #	DESCRIPTION
	CAST			STONE	
1	2310-910	ASH PAN	2	0400-700	STONE 4 x 9, BOTTOM
1	2310-916	ASH PAN DOOR	2	0300-900	STONE 5-3/4 x 8-1/8 , REAR
1	2310-920	BOTTOM		MISC	
1	2310-925	ASH GRATE BASE			
1	2310-927	ASH GRATE	1	3030-047	GLASS
1	2310-930	ASH LIP	1	3900-183	ASH PAN WOOD HANDLE
2	2310-941	SIDES	1	3900-181	WOOD DOOR HANDLE
1	2310-950	BACK	1	3120-390	BAFFLE
1	2310-955	SIDE INNER PANEL, LEFT	1	5240-137	1/2 SPRING
1	2310-957	SIDE INNER PANEL, RIGHT			
1	2310-960	PRIMARY AIR MANIFOLD			
1	2310-971	FRONT		ACCESSORIES	
1	2310-976	DOOR		93-68900	REAR HEAT SHIELD
1	2310-980	SECONDARY AIR RISER		93-69900	SPARK SCREEN
1	2310-985	SECONDARY AIR MANIFOLD, BOTTOM		90-57000	BLOWER
1	2310-987	SECONDARY AIR MANIFOLD, TOP		90-53210	OUTSIDE AIR KIT
1	2310-996	TOP			
1	2310-992	FLUE COLLAR ADAPTER W/ADAPTER			
	STEEL				
1	5390-010	ASHPAN			
1	5390-020	ASH PAN HINGE, LEFT			
1	5390-025	ASH PAN HINGE, RIGHT			
2	5390-027	ASH PAN HINGE PLATE			
1	5390-030	HANDLE ROD			
1	5390-040	AIR CONTROL HANDLE			
1	5390-045	AIR CONTROL HANDLE PLATE			
1	5390-061	SECONDARY AIR TUBE #1			
1	5390-062	SECONDARY AIR TUBE #2			
1	5390-063	SECONDARY AIR TUBE #3			
1	5390-070	BAFFLE SUPPORT			
1	5390-080	HEAT SHIELD			
1	5390-085	TOP BRACKET			
1	5010-081	CRANK			
2	5012-066	BUSHING			
3	5021-060	GLASS CLIPS			
1	5390-050	LATCH			

Safety Label

CONTACT YOUR LOCAL BUILDING OFFICIALS ABOUT [] RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA []



Listed Room Heater, Solid Fuel Type
Also Suitable for Mobile Home Installation Pursuant to (UM)84-HUD

Tested by:
Intertek Testing
Services NA, inc.

Manufactured by:
Industrias Hergom S.A.
Apdo. de Correos,
208 de Santander
Santander, Spain 39080

- or -
hearthstone
317 Stafford Ave.
Morrisville VT 05661

SERIAL # []
MODEL NAME:
CRAFTSBURY 1 8391 []

Conforms to UL Std. 1482
Certified to ULC Std. S627

WARNINGS

Do not use grate or elevate fire. Build wood fire directly on hearth.
Do not overfire. If the heater or chimney connector glows, you are overfiring. (See Manual)

OPERATE ONLY WITH DOORS CLOSED.

DO NOT OBSTRUCT SPACE UNDER HEATER.

TYPE OF FUEL: CORD WOOD ONLY

"PREVENT HOUSE FIRES"

Install and use only in accordance with manufacturer's installation instructions and your local building codes.

CAUTION: Special methods are required when passing chimney through a wall or ceiling, refer to local building codes. Do not connect this unit to a chimney flue serving another appliance.

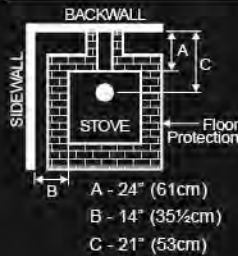
NOTE: Replace glass only with 5mm CERAMIC IR or NEOCERAM IR glass.

WARNING: (MOBILE HOME) An outside air inlet must be provided for combustion and be unrestricted while unit is in use.

Inspect and Clean Chimney Frequently-Under Certain Conditions of Use, Creosote Buildup May Occur Rapidly.



CAUTION:
HOT WHILE IN OPERATION, DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.



Minimum Clearance to Combustible Materials*

When installed on a combustible floor, non-combustible floor protection is required to cover the area beneath the heater, and extend at least 16" to the front and 8" beyond each side of the fuel loading and ash removal openings, the floor protection must extend under the flue connector and extend 2" beyond each side of the pipe.

VENT REQUIREMENTS: 6" diameter, single wall, minimum 24 MSG blue

steel connector with listed factory-built Type HT chimney or masonry chimney.

* Refer to the Installation Manual for additional Clearance information, Installation Instructions, and Operating Instructions.

OPTIONAL COMPONENTS:

Outside Air Kit	Part #90-53210
Blower Kit	Part #90-57000
Rear Heat Shield	Part #93-68900
Spark Screen	Part #93-69900

U.S. ENVIRONMENTAL PROTECTION AGENCY
Certified to comply with July 1, 1990 particulate emissions standards

Date of Manufacture

2013 2014 2015 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

DO NOT REMOVE OR COVER THIS LABEL

[] MADE IN SPAIN

[] MADE IN USA

3300-677

WARRANTY REGISTRATION

The Original Purchaser should complete their warranty registration on our website at <http://www.hearthstovestoves.com/customer-resources/warranty-registration>

- **NOTE: FILLING OUT THE WARRANTY REGISTRATION FORM IS *NOT REQUIRED* AS A CONDITION OF WARRANTY COVERAGE OR HEARTHSTONE'S PERFORMANCE.**

Hearthstone Quality Home Heating Products, Inc®

317 Stafford Ave.

Morrisville, Vermont 05661, USA

www.Hearthstovestoves.com